REMARKS

In the Office Action dated April 29, 2005, claims 1-8 were rejected under 35 U.S.C. §102(b) as being anticipated by Burke et al. Also, claims 1-9 were rejected under 35 U.S.C. §102(b) as being anticipated by Gard et al. Claim 10 was rejected under 35 U.S.C. §103(a) as being unpatentable over Gard et al.

By the present Amendment, a new apparatus claim and a new method claim have been submitted that are directed to the embodiment previously set forth in dependent claim 9 of the original claims. Accordingly, claims 1-9 have been cancelled.

Therefore, the only relevant rejection to be addressed is the rejection of claim 9. Claim 9 was rejected only based on the teachings of the Gard et al reference.

In substantiating the anticipation and obviousness rejections based on Gard et al, the Examiner cited column 4, lines 17-22 of the Gard et al reference as teaching, according to the Examiner, that the focal spot position may be determined by measuring temperature. Applicants respectfully disagree with this conclusion of the Examiner.

In the paragraph beginning at column 4, line 11 of the Gard et al reference, it is recognized that dynamic movement of the focal spot is due primarily to changes in dimensions caused by the heat that is produced at the tube anode during a scan. This passage further states that this problem is addressed by providing a focal spot position feedback signal that is preferably produced by a focal spot position sensor 62 disposed at the ends of the detector array 16. It is also stated that the focal spot position signal can be produced from a table of values indicative of focal spot drift as a function of a parameter, such as x-ray tube temperature. Applicants respectfully

submit that none of these alternative embodiments represents a real time measurement of the temperature at the anode during operation of the x-ray tube, to obtain a real-time focal spot position signal, and using that real time focal spot position signal to regulate operation of the electron beam deflector in a closed loop, using the focal spot position as the controlled variable in the closed loop regulation, as set forth in claims 11 and 12.

The description in the Gard et al reference of the focal spot position sensor 62 being disposed at the ends of the detector array 16 is clearly not a teaching to measure temperature, and is simply intended as a way to determine when the edge (margin) rays of the x-ray beam migrate in one direction or the other relative to the detector array 16.

As noted above, the Gard et al reference proposes an alternative embodiment making use of a table of values indicative of focal spot drift as a function of x-ray tube temperature. Although this indicates that a temperature measurement must be made at some point in time, this is not a teaching to make a real time measurement, and is fact is a contrary teaching, because in order to have the table available for use during operation of the x-ray tube, it must have been compiled prior to the actual diagnostic operation of the x-ray tube. Moreover, it is not even necessary that such a table represent measurements made using the actual x-ray tube that the table is subsequently used to control. The contents of the table may simply be "standard" measurements created by the tube manufacturer, and made available for use for all x-ray tubes of a particular type or model.

Applicants acknowledge that the term "real time" to describe the regulation of the detector is not explicitly used in the original disclosure, however, Applicants

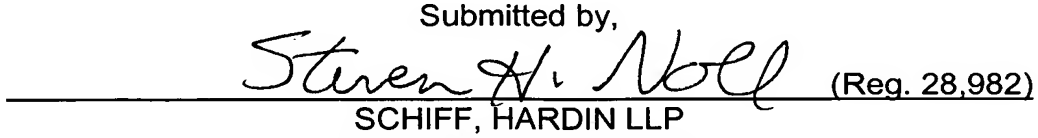
submit that it is clear from the general description of the advantages achieved by the invention in the paragraph bridging pages 3 and 4 of the original specification, and the detailed description of the embodiment now claimed in claims 11 and 12 in the paragraph bridging pages 9 and 10 make clear that the regulation is intended to be real time regulation. Moreover, in the paragraph bridging pages 8 and 9 that describes the operation of the regulation circuit in a manner that is applicable to all of the originally-disclosed embodiment, it is explicitly stated that the comparator 21 operates virtually without a time delay, and that the regulator 23 and the coil current source 27 should operate sufficiently quickly so as to be compatible. This is a further clear teaching that real time regulation is being described.

For the above reasons, claims 11 and 12 are submitted to be patentable over the teachings of the Gard et al reference. Claim 10 adds further details to the novel and non-obvious combination of claim 11, and is therefore patentable over the teachings of Gard et al for the same reasons discussed above in connection with claim 11.

Minor editorial corrections have been made in the present specification.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

Submitted by,



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